CASInfoSession9x03x03.doc

I. ATR POWER SUPPLIES UPDATE

1000P ATR Power Supply Computer

1. This computer can now be accessed over the internet if you are inside the firewall.
2. The address is http://acnpsg04:5800/
3. The password is "atrps" all in small letters and leave out the quotes.
4. It is a little slow so give it time.
5. It is very important to close the Internet Explorer window when you are done and NOT the RSVIEW32 window! If you close the RSVIEW32 window you will stop the program from running and it will have to be re-started.
6. When you are done using it you should close the Internet Explorer window because if others try to access the 1000P computer it will slow down if more than one person is accessing it.

1MW p.s.'s

Done

1. Studied problem with ripple unbalance at 1900A, no time to prove theory that Enerpro off secondary is problem. We would like to take 3 phase reference off of separate 480V input to the p.s. blowers but the phase rotation must be corrected there first. Right now the ripple is still unbalanced at 1900A but is not outside of spec so we can live with it.
2. Corrected problem with contactor control power light, SWX1 and solid X1 problem.

To Do

1. Writing ECN to reflect Contactor Control Power Light.
2. Need to add protection for phase monitoring relays. They are still jumpered out.
3. Need to connect ammeters to CT's in contactor.
4. Fix problem Frank Dusek found with YD17 on RSVIEW32, watermat or sponge? I cannot remember.

SWM p.s.

Done

1. Added buffer for setpoint, offset went from 150A to 16A, still should improve.
2. Corrected MADC readback problem-software on controls end.

To Do

1. Improve setpoint buffer or find problem with 16A offset.
2. Write ECN showing setpoint buffer.
3. Test spare reversing switch boards on a real p.s.

1000P Substation

PK replaced tripping circuit breaker with one that has flags so the next time the breaker trips will have some idea why. I know it does trip if one of the 1MW's is turned on and the DC output shoots up to the top as soon as you turn ON.

Other Stuff To Do in ATR

Break out Cluster lockout and cooling tower interlock separately according to Harold's drawing.

Fix MADC problems on pet pages – see separate list.

Come up with a better damping resistor on Inverpower filter banks. The one we have now seems to open on some p.s.'s but the problem is much better since we increased the power rating on them once.

II. RHIC POWER SUPPLY UPDATE

Correctors

1. All correctors are being removed and these are most of the modifications:
2. A new micro is being installed so all local pushbuttons will only work in LOCAL only.
3. A new compensator board is being installed with a parking circuit and a jumper that will allow you to go from resistive mode to inductive mode without soldering in and de-soldering a resistor.
4. DC overcurrent circuit being modified so p.s.'s can run at max current.
5. Heat sinks being added to some chips.
6. Undervoltage circuit being checked out.
7. MOV's are being added to the AC inputs of all the correctors.

Bipolar Suncraft 150's and 300's

1. All bipolar 300's have been remove and soft start circuit has been modified so IGBT's won't short out on turn ON
2. The bipolar 150's are still being modified for the soft start circuit, they are not done yet.
3. Insulation is being added between a screw on the case of the p.s. and the DC bus because they are close and sometimes touch causing hi-pot problems.

Ice Ball Prevention

1. Insulation is being added to all the RGIC magnet trees.
2. Temperature sensors are being added to all the RHIC magnet trees.
3. Humidity sensors are being added in the tunnel in every sextant or so.
4. Heaters are being checked and replaced if they are found to be bad.
5. New thermostats are being installed on the magnet trees with the proper temperature settings.

Sextupole p.s.'s

A buffer is being added between the sextupole current readback signal and the quench detector input.

Gamma-T p.s.'s

Fuse slugs are being removed and replaced with a wire soldered in place so we don't get mysterious OFF trips of these p.s.'s

Magnet Tree p.s. Connection Terminals

All magnet terminals will be checked with a toque wrench

Snakes and Spin Rotators

Modifying fault from Power Ten p.s. so we can look at Overvoltage as well. The relay board pc board has to be replaced in the 3u chassis to monitor this fault.

Main Power Supplies

1. PLC code totally re-written and checked out.
2. Re-dundant SCR's being added to main power supply quench protection
3. Error fault should soon be added to main p.s.faults.

RHIC POWER SUPPLY SPARES

1. All of the spares are located in building 1007W
2. The following web page has the inventory logbook (may not be latest):

http://www.c-ad.bnl.gov/ceps/files/xls/Inventory.xls

COLLIDER ELECTRICAL POWER SUPPLY HOME PAGE

http://www.c-ad.bnl.gov/ceps/

III. LOCKOUT OF RHIC POWER SUPPLIES

Service Buildings

Quadrupole p.s.'s (any p.s. with a "q" in the sitewide name)
If you are in a service building and you are working on a nested quadrupole p.s. then you must lockout the corresponding main p.s.'s. You will know if it is a nested quadrupole p.s. if it DOES NOT have a "tq" in the sitewide name. If the p.s. has a "tq" in the sitewide name the you can just lockout the 208VAC for that rack.

Dipole p.s.'s (any p.s. with a dhx or dh0 in the sitewide name)
These are all nested and the procedure for locking these out must still be written. I will get it done before we run.

Alcoves

None of the p.s.'s in the alcoves are nested so if you must work on one p.s. in a rack then you just have to lock out the 208VAC feed to that rack.

Lockout Procedures

Service Building Nested Blue Quadrupole Lockout Procedure:
http://www.rhichome.bnl.gov/AGS/Accel/SND/DerivProcs/CPS/CPS005.PDF

Service Building Nested Yellow Quadrupole Lockout Procedure:
http://www.rhichome.bnl.gov/AGS/Accel/SND/DerivProcs/CPS/CPS006.PDF

IV. RHIC P.S. REPLACEMENT PROCEDURES

After following the proper lockout procedures here are some links to the power supply replacement procedures.

Service Buildings

Blue Rack Mounted Dynapower Quadrupole p.s.'s
http://www.c-ad.bnl.gov/ceps/files/pdf/Qd1Qf1Qd3Qf3Qf6Qd6Q6Qf8Qf9PSReplacementPro.pdf

Suncraft bipolar 150A p.s.'s that have "qf2" or "qd2" in the sitewide name (NOT "tq")
http://www.c-ad.bnl.gov/ceps/files/pdf/Qd2Qf2PSReplacementPro.pdf

Suncraft bipolar 300A p.s.'s
http://www.c-ad.bnl.gov/ceps/files/pdf/Q89Qd9PSReplacementPro.pdf

Suncraft bipolar 150A p.s.'s that DO have "tq" in the sitewide name:
http://www.c-ad.bnl.gov/ceps/files/pdf/TQPSReplacementPro.PDF

Alcoves

Correctors
http://www.c-ad.bnl.gov/ceps/files/pdf/CorrectorReplacementPro.pdf